

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

Rec'd PCT/PTO 06 JUN 2005

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 June 2004 (17.06.2004)

PCT

(10) International Publication Number
WO 2004/050986 A1

(51) International Patent Classification⁷: D21C 5/00, C08L 1/02, C12P 19/04, B01D 67/00, 69/00 // C12R 1:02

(74) Agent: ADVOCACIA PIETRO ARIBONI S/C; Rua Guararapes, 1909, 7o andar, 04561-004 São Paulo - SP (BR).

(21) International Application Number:
PCT/BR2003/000174

(22) International Filing Date:
26 November 2003 (26.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PI 0205499-0 5 December 2002 (05.12.2002) BR

(81) Designated States (*national*): AB, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant and

(72) Inventor: LEVY, Nelson, Lutz, Ferrelra [BR/BR]; Rua Antonio de Gouveia Giudice, 1578, 05460-001 São Paulo - SP (BR).

(72) Inventors; and

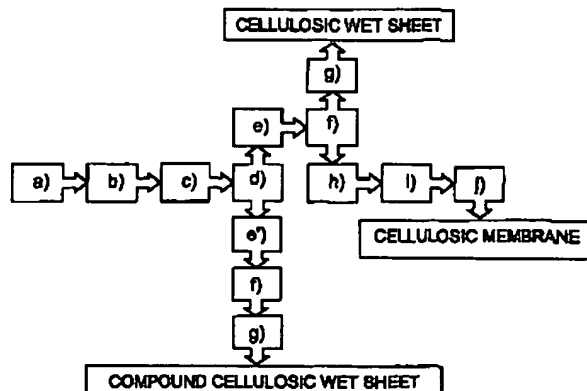
(75) Inventors/Applicants (*for US only*): KUROKAWA, Edna, Cristina [BR/BR]; Rua Nicolau Barreto, 364, 04583-000 São Paulo - SP (BR). PODLECH, Pablo, Angel, Sanchez [BR/BR]; Rua Francisco Baggenstoss, 80, 89217-110 Joinville - SC (BR).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A PROCESS FOR OBTAINING A CELLULOSIC WET SHEET AND A MEMBRANE THE EQUIPMENT USED TO OBTAIN THE MEMBRANE AND THE MEMBRANE OBTAINED.



(57) Abstract: Said process used to obtain, in industrial scale, wet sheets and membranes of bacterial cellulose of high purity and specific physical and chemical properties, using the appropriate culture medium that is prepared in a mechanical mixer furnished with a jacket for temperature control and heat exchange, using selected recycled or non-recycled inoculums, fermentation in covered trays with the temperature controlled by an external heating/cooling jacket through the circulation of hot/cold water, not requiring control of humidity and air renovation, collecting of the wet sheets that are then submitted to a process of purification and whitening by successive whirlpool washing and rinsing cycles using diverse heated or non-heated aqueous solutions, being afterwards forwarded to draining and drying/dehydration, passing through a semi-continuous system of rollers and belt conveyors made of absorbent material. This invention also refers to the process used to obtain compounded cellulose wet sheets. When a wet sheet reaches a certain thickness, screens or other artifacts of diverse materials are added to the surface of the wet sheet already pre-formed so that in a second fermentation stage such screens and artifacts are covered by the cellulose wet sheet, thus forming a compound product.